

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Andriessen ) Attorney reference: 27500-72  
)  
Serial No.: Unknown ) Examiner: Unknown  
)  
Filing Date: Attached ) Art Unit: Unknown  
)  
Title: Preparation Of ZnS Particles )  
Doped With Copper )

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, DC 20231

Dear Sir:

The following amendment and remarks are submitted prior to counting the claims.

**In the Claims:**

Please amend claims 3, 5 and 7 in accordance with the instructions provided in Appendix A.

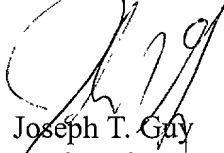
Please enter claims 8-29 in accordance with the instructions provided in Appendix A.

An unmarked copy of the claims is provided in Appendix B.

**REMARKS**

Claim amendments are entered to insure proper dependency.

Respectfully submitted,



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January 16, 2002

## APPENDIX A -Claim Amendments

Please amend claims 3, 5 and 7 in accordance with the following instructions.

3.(Amended) A method according to claim 1 [or 2] wherein said copper ions are copper (I) ions.

5.(Amended) A method according to any of [claims 1 to 4] claim 1 further comprising the step of  
subjecting the mixture formed by said precipitation step to a diafiltration and/or  
ultrafiltration treatment.

7.(Amended) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer  
containing ZnS:Cu particles prepared by a method according to [any of the previous  
claims] claim 1.

Please enter claims 8-29 as indicated.

8.(New) A method according to claim 2 wherein said copper ions are copper (I) ions.

9.(New) A method according to claim 8 wherein said copper (I) ions are incorporated as  
copper (I) chloride.

10.(New) A method according to any of claim 2 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.

11.(New) A method according to claim 10 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.

12.(New) A method according to any of claim 3 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.

13.(New) A method according to claim 12 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.

14.(New) A method according to any of claim 4 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.

15.(New) A method according to claim 14 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.

- 16.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 2.
- 17.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 3.
- 18.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 4.
- 19.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 5.
- 20.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 6.
- 21.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 7.
- 22.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 8.
- 23.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 9.

- 24.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 10.
- 25.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 11.
- 26.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 12.
- 27.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 13.
- 28.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 14.
- 29.(New) A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 15.

## APPENDIX B - Unmarked Claims As Amended Or Newly Entered

1. A method for the preparation of a dispersion of zinc sulfide particles doped with copper (ZnS:Cu), said method comprising the step of performing a precipitation by mixing together a zinc salt, a sulfide, and a citrate or EDTA complex of copper ions, dissolved in several aqueous solutions.
2. A method according to claim 1 wherein said precipitation is performed according to the double jet principle, whereby a first solution containing said zinc salt and said citrate or EDTA complex of copper ions, and a second solution containing said sulfide are added simultaneously to a third solution.
3. A method according to claim 1 wherein said copper ions are copper (I) ions.
4. A method according to claim 3 wherein said copper (I) ions are incorporated as copper (I) chloride.
5. A method according to any of claim 1 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.
6. A method according to claim 5 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.

7. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 1.
8. A method according to claim 2 wherein said copper ions are copper (I) ions.
9. A method according to claim 8 wherein said copper (I) ions are incorporated as copper (I) chloride.
10. A method according to any of claim 2 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.
11. A method according to claim 10 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.
12. A method according to any of claim 3 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.
13. A method according to claim 12 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.
14. A method according to any of claim 4 further comprising the step of subjecting the mixture formed by said precipitation step to a diafiltration and/or ultrafiltration treatment.



15. A method according to claim 14 wherein said diafiltration and/or ultrafiltration treatment is performed in the presence of a compound preventing agglomeration of said ZnS:Cu particles.
16. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 2.
17. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 3.
18. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 4.
19. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 5.
20. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 6.
21. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 7.
22. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 8.

23. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 9.
24. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 10.
25. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 11.
26. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 12.
27. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 13.
28. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 14.
29. A Thin Film Inorganic Light Emitting Diode device comprising a coated layer containing ZnS:Cu particles prepared by a method according to claim 15.